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ABSTRACT

To determine where U.S. citizens receive their political and current events knowledge, researchers at the Massachusetts Institute of Technology (MIT) interviewed people at a Boston shopping mall. This preliminary report, the first in a series to examine the political knowledge gap between the affluent and the economically disadvantaged, examined information dissemination through television, newspapers, and news magazines. The researchers found television to be more successful at presenting abstract and distant political issues, while print media, especially newspapers, were more successful with immediate and concrete presentation. This finding contradicts the perceptions of journalists interviewed prior to the study. It was hypothesized that television attracted people with low initial interest and low cognitive skills while the print media is used more for information retrieval by informed citizens. To test this hypothesis, individual differences in cognitive skills and issue-interest were explored, and the results distinctly revealed television as more effective to the low interest respondents. So far, the study reflects the pattern found in other previous media studies. If the audience is cognitively skilled or highly motivated, the communication media do not make a difference. The researchers conclude that U.S. citizens do not select print or broadcast media while excluding information from other sources, and most citizens pick up ideas and information from a complex mix of media and personal discussion. A three-way analysis of variance is used to analyze the study. Graphs and references are included. (DJC)

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KNOWLEDGE, OPINION AND THE NEWS: THE CALCULUS OF POLITICAL LEARNING

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We are puzzled about why in a media-abundant society like the U.S., although some citizens are information-rich, so many are information-poor. There is a troubling knowledge gap between what typical citizens know about the political and economic world around them and what democratic theory would seem to require if the system is to work as intended. Furthermore, there is an equally troubling knowledge gap in the citizenry itself between the active political elites and the more marginal, less educated and less attentive strata of society.

Such political knowledge gaps may represent more than just a differential recall of dry facts. These discrepancies could reflect a systematic division within society in how citizens with different cognitive skills and political orientations negotiate an understanding of complex issues and events in the news media. The social distribution of understanding may be tied to political polarization and alienation. It has been argued that the growth of television as the predominant medium of public communication in the U.S. has led to political alienation, a decline in political participation, a declining role for political parties and an overall evisceration of political debate. Is that true? This investigation set out to take a closer look at the differential impact of news media on public information.

Our research focuses on a comparison of television news, newspapers and news magazines to explore the possible mechanisms which could explain the

persisting political knowledge gap and perhaps respond to it. We are particularly interested in how what we learn might be applied to new communications technologies just now on the horizon.[1]

The findings reported here are drawn from an ongoing series of studies at MIT on political communication and political learning sponsored in part by the Spencer Foundation. Our research project as a whole will attempt to show whether or not the knowledge gap presents a systematic pattern of disadvantage or whether it varies functionally by issue. Two series of experiments will test what aspects of media reporting style and media modality are likely to capture attention, and convey information to people who are less knowledgeable, less cognitively skilled and generally apolitical. A content analysis and parallel in-depth interviews with both journalists and the mass citizenry will provide insight into the process by which some issues come to be seen as important by large segment of the population, while other issues are ignored. This report is based on the first round of data collection and a partial analysis of the data. Accordingly, this paper should be treated as a preliminary report on work in progress. A more complete report will be available from the authors later in the year.

Information Inequalities

Public opinion surveys on topics of national importance reveal a substantial gap between well-informed citizens and a large group of

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[1] Neuman, forthcoming; Arterton, 1987; Abramson, Arterton and Orren, 1988.

inattentive and partially informed citizens.[2] Why has the proportion of perennial "don't knows" remained stable while the level of education in the United States has risen so substantially?[3] From a political standpoint there might be less concern about the knowledge gap if the pattern of inattention was randomly distributed throughout the population. But, of course, that is not the case. The less informed are concentrated in the socially peripheral and economically disadvantaged sectors of the population.[4] On the one hand, because of their need to access politically controlled entitlements, the disadvantaged might be expected to be especially attentive to the political process, or at least parts of it.[5] On the other hand, because of the additional effort involved in processing unfamiliar, complex and abstract information, the relative inattention of less educated citizens may be the result of what is, in effect, a rational calculus.[6] The evidence of survey research supports with the view that for many citizens the cost of information outweighs their political motivation. Because existing disparities in information are dysfunctional for a healthy democratic process, studying their causes has theoretical and practical significance.

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[2] Neuman, 1986; Converse, 1964; 1970; Converse and Markus, 1979; Tichenor, et al., 1970, Burdick, 1959. Discussions of the discrepancy between democratic theory and public opinion surveys are found in Lippmann, 1922, Schumpeter, 1942, Berelson, et al., 1954; Campbell, et al., 1960; Schattschneider, 1960; and V. O. Key, Jr., 1961;

[3] Converse, 1975.

[4] Nie, Verba and Petrocik, 1976; Glenn, 1972; Tichenor, Donohue, and Olien, 1970.

[5] Schlozman and Verba, 1979.

[6] Downs, 1957.

We suspect most issues involve a mix of attention. Perhaps a few citizens see most everything as a serious policy issue and some others see it all as political theatrics. We suspect, again, that most citizens are prepared to redefine issues either way. Consequently the question of issue framing is central to our research. Surely the way a journalist chooses to represent and characterize an event has the potential of cuing the viewer or reader in one direction or another. Is there evidence that the visual and entertainment orientation of television cues toward personalized narrative and political theater while print media with the somewhat more serious tradition of newspaper journalism cue toward a dry and abstractly formulated policy question? Are information inequalities reinforced by these technological and historical patterns?

Models of Political Communication

We see this research as lying at the cusp between two incompatible theories of civic behavior. One characterizes the citizen as a rational actor, the other as an inattentive and passive political spectator. We find elements of truth in both and put forward a third perspective, a constructionist model, to explain how and what citizens learn about politics.

Rational Actor Models of Political Behavior

Public choice theorists define psychology as exogenous. This is a reasonable research strategy. Underlying each political decision, as received wisdom would have it, lies a utility function. Voters are compulsive utility maximizers. They calculate which candidate is closest to

their beliefs on the issues that are most salient to them, and vote accordingly.[7] If a voter decides candidate X has an honest face, such behavior is simply defined as random noise. Although such models have explanatory power and represent an important contribution, they are by their nature incomplete. Three elements are missing from such a model. First of all, it is not clear that political actors are motivated to make their policy positions clear.[8] Second, even if political candidates were motivated to provide a complete and unambiguous list of issue positions, it is not clear the media would pay much attention unless the competing candidates' lists conflicted. Even then, journalists might highlight a horse-race or a candidate-as-person angle in an election story.[9] Third, if the political elites and media cooperated in providing a complete accounting, it is not at all clear that the public would follow it. Political news has to compete for public attention with any number of other more accessible and potentially relevant facts, figures and anecdotes.

Passive Audience Models of Media Behavior

The counterpoint to the rational actor model is the notion of the voter as a (vaguely) amused audience member. In such a perspective, there is no clear-cut distinction between following politics and following baseball. You might pick a team and root for it. Participation is vicarious and self-rewarding. It is anything but a calculation of self-interest, it is visceral and expressive.[10] The dominant stereotype here is the unthinking

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[7] Enelow and Hinich, 1984.

[8] Page, 1978.

[9] Patterson, 1980.

[10] Milbrath, 1965; Lang and Lang, 1984; Edelman, 1971; Neuman, 1986.

victim of political propaganda or at least the over busy and distracted citizen who accepts political propaganda at face value. Research in the fields of communication and advertising research occasionally embraces this model. To write a history of communications and public opinion research is to track this argument as it ricochets back and forth between exaggerated stereotypes of an obstinate/unlearning audience and an audience too easily persuaded.[11]

A Constructionist View of Political Learning

We model the process of political learning as an interaction of three elements -- 1) the nature of communications media, 2) the fundamental nature of the issue or news event itself, and 3) the attitudes and cognitive orientations the individual brings to the news story. (See Figure 1) Our approach is in the constructionist tradition of mediated learning.[12]

The debate over attentive and rational versus passive and easily persuaded audiences has led to a series of refinements in public opinion theory including the notion of a two-step flow involving opinion leaders' mediation and interpretation of news, the spiral-of-silence notion of deference to community opinion, of course, the uses and gratifications idea.[13] The constructionist perspective contributes two additional elements to public opinion theory--explicit attention to the character of the content

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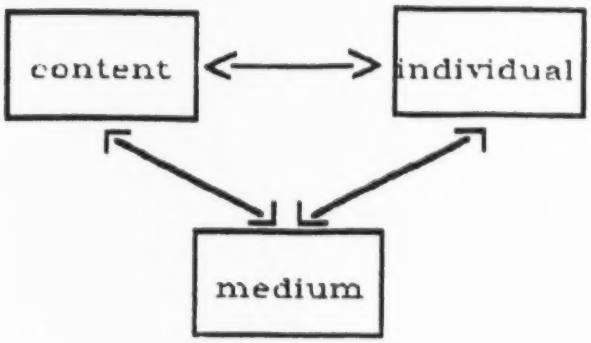
[11] Neuman, forthcoming; Katz, 1987; McGuire, 1986.

[12] The term constructionist comes from Gamson, 1986. One hesitates to make too much of an overly formalistic notion of schools of thought, or Kuhnian paradigms. But in this case it is a particularly apt fit. See Neuman, forthcoming; Beniger, 1988; Katz, 1988. See also, the "transactional model" proposed by Kraus and Davis, 1976.

[13] Katz and Lazarsfeld, 1955; Noelle-Neumann, 1984; Rosengren, Wenner and Palmgreen, 1985.

being communicated and an attempt to integrate cognitive theory, including conceptual frames and scripts and the Downsian notion that acquiring and processing information takes energy and effort.

Figure 1



Accordingly, we emphasize the idea of " constructing knowledge." The acquisition of information is not a mechanical process of moving an inert block of facts from some storage medium into one's head. The process is fluid and interactive, as the individual guesses, negotiates, interprets, and effectively puts new information in the context of what is already known. Piaget called the process "accommodation" to highlight that point.

If there is to be learning, there has to be the sense that an issue or event is worth knowing about. According to Olson, most people believe that most issues either do not affect them or cannot be affected by them.[14] But work completed since Olson and Downs published their classic studies indicates that citizens do indeed have (what was later called) a "socio-

[14] Mancur Olson, 1971.

tropic" sense of the public good and collective welfare.[15] So paying attention to the ongoing political debate is likely to involve more than a simple-minded, does-it-affect-me, pocket-book calculation.

Furthermore, if an issue or event is perceived to be interesting or important there is the matter of putting it in a comprehensible context. Is Star Wars primarily a question of technological capacity or the symbolic politics of international relations? Is AIDS perceived to be a moral and religious question or a public health issue? Such questions of framing are intimately intertwined with the questions of attentiveness and learning.[16]

The Nature of News Media

Those who blame television for the knowledge gap often argue that twenty two and a half minutes of nightly news cannot possibly provide an adequate amount of information. Differential rates of public learning may arise not only from the size of the economically or technologically determined "news hole," but also from public perceptions about the news media. In general, people perceive print media as "hard" and television as "easy." Successful use of a hard medium, requires a high degree of literacy interest, and judgment.[17] Learning from television news appears to have a more casual, incidental quality about it. A person need not be literate or especially interested, since the news is preselected, compressed and packaged into a story-like narrative structure.[18] Survey research data offer evidence that people who rely on television as their primary news

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[15] Kinder and Kiewiet, 1981; Sears et al. 1980; Scholzman and Verba, 1979.

[16] Fiske and Kinder, 1981; Houston, 1976; Ryan, 1981.

[17] Salomon, 1984.

[18] Robinson and Sheehan, 1983; Gans, 1979.

source are overall less informed about public issues than print users, but the causal processes here are likely to be more complex.[19]

Some argue, for example, that television news is compensatory, that is, that people with low levels of political interest or cognitive skills may learn information from television that would otherwise be inaccessible. Certainly those who have difficulty reading will learn more from a non-literacy-dependent medium.[20] "Inadvertent" learning may occur because the combination of audio-visual stimuli is so powerful, or because television news is embedded in a medium recognized for its entertainment value.

Research Design

This paper will report on only one element of a integrated set of research studies designed to get a better understanding of the complex interactions between news organizations, complex political, social and economic issues facing the polity, and the strategies citizens develop as information processors. The other studies in this series include extended depth interviews with citizens about the same issues examined here but focusing more on political schema and patterns of conceptualization which are more clearly revealed by qualitative approaches.[21] The project includes a parallel set of depth interviews with professional journalists about the same issues in the news. We are in the process of comparing the patterns of

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[19] Neuman, 1986; Patterson, 1980; Nie, Verba, Petrocik, 1976; McCombs and Shaw, 1972; Campbell, Converse, Miller, and Stokes, 1960; Lazarsfeld, Berelson, and Gaudet, 1944.

[20] Patterson, 1986; Krendl, 1987.

[21] Our subjects there represent a small subset of the experimental population reported on here.

conceptualization of the journalists and their typical viewers and readers and have found, thus far, some interesting disjunctures between the two. We have also conducted an extensive content analysis of news coverage of these issues in the print and broadcast media over the last three years. Our hope is to explicitly and systematically contrast the findings derived from our experimental sample of media content with broader content trends in the real world.

This paper will concern itself primarily with a series of experiments currently in progress at the Audience Research Facility of the MIT Media Laboratory. Since we hope to project our findings to the adult citizenry at large and focus extensively on differences in cognitive skill and economic background, we have chosen not to rely on the traditional and more easily accessible population of college students. We have foraged out into strange new territory for social scientists, a shopping mall on Boston's north shore. Our subjects are recruited in the mall while shopping and offered a modest gift certificate for cooperation. It is a less than perfect sampling frame (especially in comparison to in-home survey research), but it is probably more representative than a sample derived from advertising for subjects in a local paper or simply relying on the ever popular sophomore psychology class pool. The sample is stratified by age and sex to reflect the population distribution of Essex County in which the facility is located.

Media and Modality Experiments

The experimental party of our research, by design, removes many of the elements which other forms of research have suggested might produce media differences in learning. First, the experiments are task-oriented, so that the level of attention of subjects to the media stimuli are much higher than in the real world of competing goals and individual selection. The task assignment of the experiment would level the differences between, say, television which has been described as an "attention-grabbing" medium, and newspapers, which require more motivation. Subjects are randomly assigned to the experimental media condition, so that the choice of medium is not up to the individual, as it usually is in the quotidian environment. This aspect of the experiment is expected to level the differences between individual performance, as people will not necessarily be exposed to the medium in which they prefer to get information. In addition, the subjects do not choose the issue to which they will be exposed. Therefore, the level of attentiveness will vary across individuals. These individual differences, however, cancel each other out across media as a result of randomized assignment to experimental (media) condition.

Content differences have also been modified by the selection of the same kind of stories from each medium--an analytic story and a concrete or event-centered story. We know from the work of researchers such as M. Robinson, that television is less likely to present analytic stories while news magazines (published weekly), are more likely to contain such stories. Furthermore the experiment is a "single shot." While our interview schedule includes prior knowledge, the learning measured in the experiment itself, is not gained by accretion (which is more likely to result in long-term storage). Given the various constraints that the experimental design introduces, we have created a very conservative test of media differences. In parallel with the set of experiments on which we report here, we are also undertaking an even more highly constrained set of experiments in which the text of the news is held constant across media modalities (print, audio, and audio-video).

The set of experiments that we report on today, should provide insight into real-world learning because of several factors in the design. First, of course, is the population--a cross-section of adults. Second, the stimulus material is actual news stories just as they appeared on television, in newspapers and in magazines. The differences in the characteristic manner of news presentation of each medium has been preserved in the experiment. By investigating a variety of issues--some remote (such as SDI) and some personal and immediate (such as AIDS), rather than the political research constant--elections--our design should shed light on the continuing civic activity of becoming informed about public issues. An important part of the experimental design is that it permits us to measure a variety of individual characteristics including, prior knowledge about the

topic to which the individual is assigned, and level of cognitive skill, which we expect to have an impact on learning. Other kinds of research generally employ some surrogate for cognitive skill. Our design permits us to test for the interaction of cognitive skill with media differences, so that we can see whether, for example, less skilled individuals learn better from magazines or newspapers. In addition our experiments, involve a pre-test that directly assesses characteristics that have been found to affect learning: media use,prior knowledge, attention to and opinions about the issue, political efficacy, and cognitive skill, so that the contribution of these individual characteristics to learning can be directly assessed. Randomization was proved successful in assuring similar distributions of virtually all variables across the experimental groups. Most importantly the experimental groups were virtually identical on key variables including overall cognitive skill, media use, and prior knowledge.

Learning about issues from the media is assessed after the media exposure, employing instruments designed to evaluate news recall, information gain, opinion shift and policy judgments. Both learning gain and opinion shift are evaluated by pre- and post-exposure repeated measures.[22] The extent of any "cuing" effect arising from the pre-and-post

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[22] Experimental Instruments The subjects' cognitive ability is assessed by two standardized tests from the Factor Referenced Cognitive Inventory developed by the Educational Testing Service--the Advanced Vocabulary Test,Part I and the Inference Test, Part I. The standard NES items concerning media use,personal and political efficacy, and political participation are also included, along with a number of items concerning the subjects' connection to the topic: personal salience of the issue, how easy or difficult it is to understand, how much attention the subjects pay to news about the issue, and most importantly, their knowledge and opinions about the topic. In an open-ended format, subjects are asked to explain "the general idea" of the topic and why they hold the opinions they do about the relevant policy issue. In order to quantify the impact of the media exposure, subjects are asked to respond to a series of true-false items

research design will be assessed by post-only experimental groups (the results of which will appear in our final report). Cuing is not a major concern, however, since the emphasis of the analysis is on the relative impact of the media conditions on learning, rather than on an absolute information gain from the experimental exposures. Any cuing effect would be identical across conditions and therefore would not influence the interpretation of relative media learning.

Results

Our research design takes the form of a three-way analysis of variance focusing on interactions between our three fundamental domains: media differences, content differences and individual differences. One way to look at this process is to imagine probing into a cube of data as illustrated in Figure 2.

The cube can be used as an analytic tool for any dependent variable of interest. In our research we have been focusing on learning effects as well as a variety of attitude and attitude change measures to explore the relative "persuasive power" of the mass media. This report will focus primarily on learning. The dependent variable is a before-and-after

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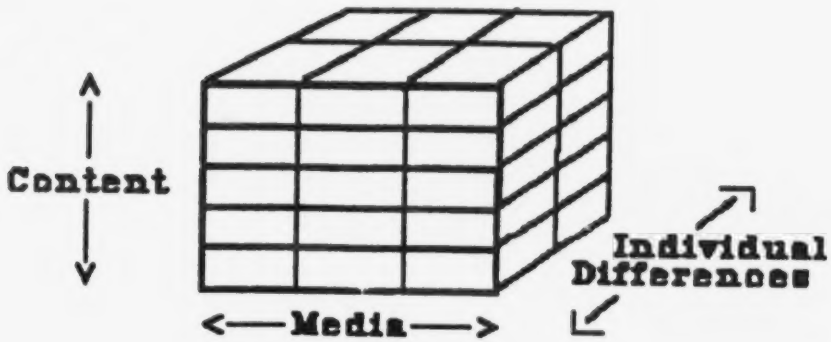
about the topic proposals both before and after the media exposure. A Likert-type scale of opinion about each issue is also placed before and after the exposure, so that any shift in attitude can be detected. To reduce the cuing effect, the news stimulus is preceded by a long series of distractor questions (including the cognitive skills tests and socio-demographic questions). After the media exposure, news recall is measured by a series of multiple-choice questions(the News Recall Index), based on specific information common to the three naturally-occurring media conditions (and, of course, to all of the text-constant modality conditions). Learning is further assessed in the post-test utilizing multiple-choice and open-ended judgment questions, to permit analysis of media influence on the subjects' ability to apply information to policy judgments. Only the results of the closed-ended, pre- and-post learning assessments are reported on here.

Figure 2

Three Dimensions of Analysis



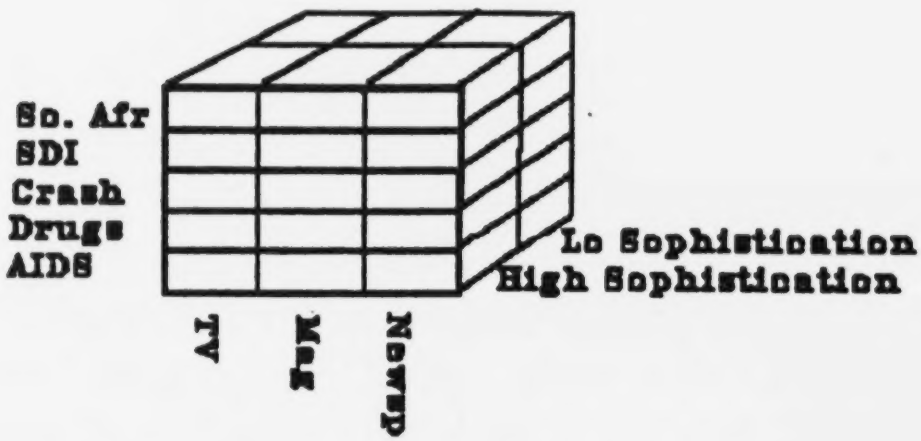
knowledge checklist (of twelve to fourteen information items covered in each of the three media) which allows us to assess the relative "knowledge increase" for individuals randomly assigned to various media and content categories. An examination of the front face of the cube reveals the overall relationship between naturally occurring media coverage and learning for each political issue. We will look first at the face of the cube to try to uncover an overall pattern of media coverage and political learning. We will then turn to depth the dimension of the cube to explore how these patterns interact with cognitive and other background characteristics of the experimental population.

We can fill in the cube diagram with the specific media and political issues utilized in the current set of studies. The three media, as noted, are television news (primarily the CBS Evening News), newsmagazines (Time,

are television news (primarily the CBS Evening News), newsmagazines (Time, Newsweek and U.S. News) and newspapers (primarily the Boston Globe.) The three political issues, arrayed from the most distant and abstract to the most immediate and concrete are apartheid in South Africa, the Star Wars initiative, the stock market crash of October, 1987, drug abuse and AIDS. They are illustrated in Figure 3.

Figure 3

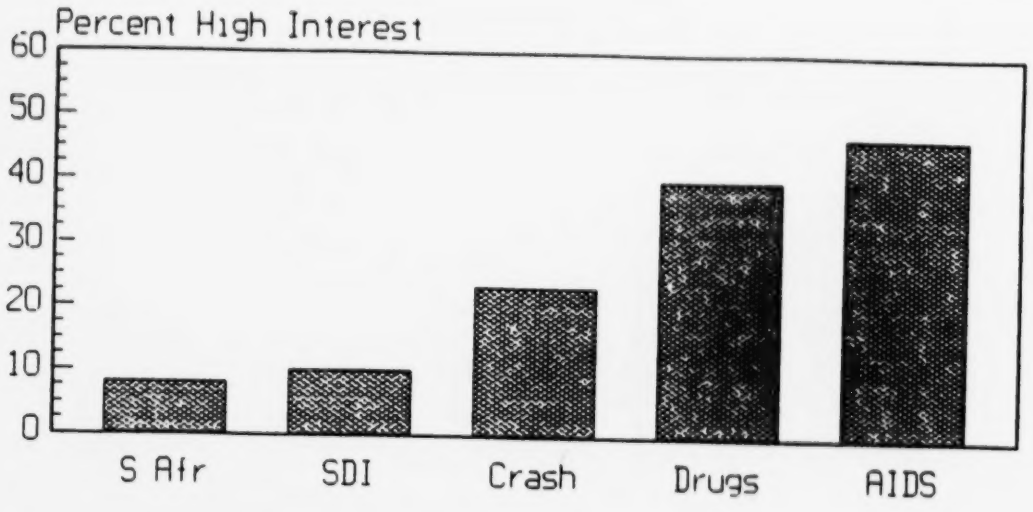
Three Dimensions of Analysis



The ordering of the issues from distant/abstract to immediate/concrete proved to be an important element of the analysis and is derived from ongoing content analytic work which we will not detail here. But the ordering is confirmed by our own respondents who clearly differentiate the issues in terms of personal salience as illustrated in Figure 4.

Figure 4

Issue Salience



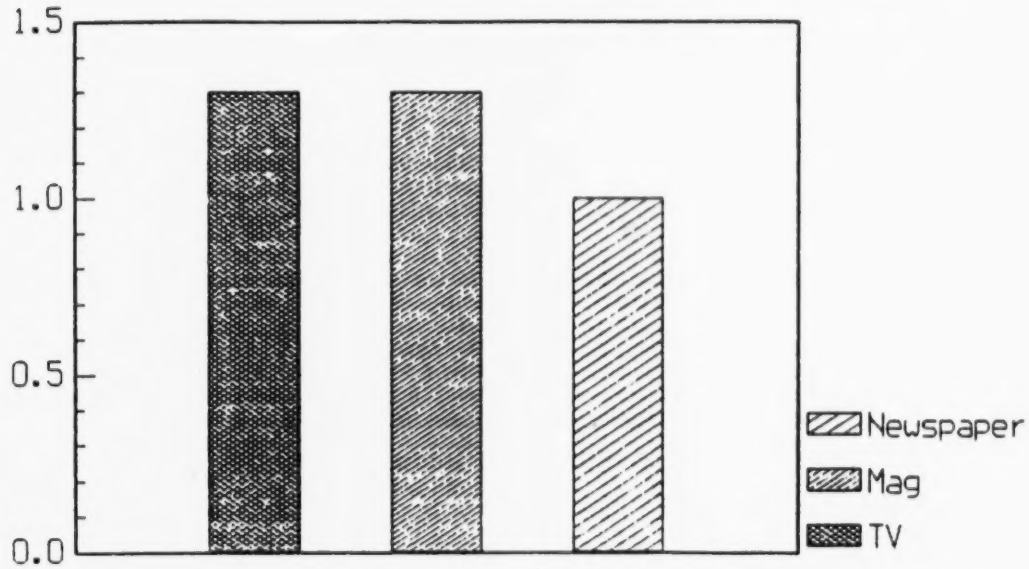
We turn next to one of the most central questions of political communication in the electronic age, the so-called McLuhan question--do the media really make a difference? Is it true that the inherent character of broadcast journalism impoverishes political communications and diminishes political learning and awareness within the mass public?

Recalling that our research design removed several of the elements that might otherwise generate an apparent "media effect" including the random assignment of individuals to media condition (holding constant the real-world reliance of the less-attentive on broadcast rather than print sources) and carefully matched story content (holding constant the real-world prevalence of narrative reporting genres associated more generally with the broadcast media), we did not necessarily expect to find an overall media

effect and, indeed, we did not find it.

Figure 5

Media Differences
(Increase in Knowledge Scores)

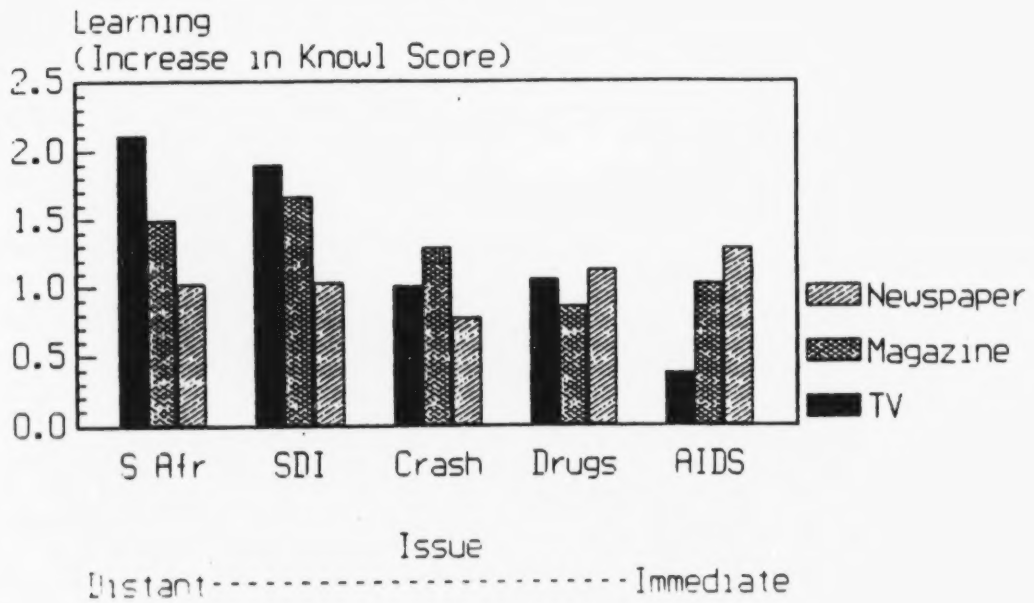


If anything, the television coverage led to a slightly higher level of learning. But statistically, it is a wash--no luck as yet in stalking the elusive media effect. Our design, however, led us further. Perhaps there is an interaction of some sort between the nature of the political issue at hand and the relative effectiveness of the media in communicating stories. In our interviews, journalists raised the issue of "TV oriented" or "print-oriented" types of stories. Professional judgment seems to identify the concrete and immediate as a natural for television journalism with its film footage and on-the-spot reportage. Economic events and issues with abstract words and copious statistics are judged a better match for a print piece.

The first significant surprise of our research, and a fundamental

finding is that, at least in terms of successful communications to the mass electorate, the journalists had it backwards. Television is more successful with the more abstract and distant political issues, print media, especially newspapers, more successful with the immediate and concrete. The data (representing the front face of our data cube) are summarized in Figure 6.

Figure 6



Moving from left to right (from distant to immediate issues) we see a complete reversal. The relatively obscure events of South African politics and the technological complex debate over star wars are more successfully communicated through television. Newspapers do least well, magazines fall in-between. An analysis of variance of these differences proves to be significant at the .05 level. There are no significant differences for the economic and drug issues. And AIDS information is more effectively

communicated in the print media (again significant at the .05 level.) Recall that exactly the same information, as measured by the 12-item information test, was included in the coverage of each medium. What varied was the physical medium of communications and the stylistic differences which have evolved in each journalistic tradition.

What could explain such a counter-intuitive result? We are not completely convinced as yet. We hope to examine some further issues and complete a series of studies when the stylistic content is held constant across media. But we have a strong candidate for an explanation. It harkens back to the discussion above of information costs and the ease of accessing information in various media. We hypothesize that television is most successful in breaking the attention barrier. Its intrusive, attention-grabbing capacity with visually concrete examples (perfected, perhaps, in the commercials which serve as its economic base) make the personal relevance of an issue apparent. People with low initial interest, or with low cognitive skills for whom careful reading would represent a real effort, are drawn in. Print media, on the other hand, are a more factual and complete, and when the interest already exists, are a particularly efficient medium for information retrieval. But such information retrieval works only when the citizen is motivated to do the retrieving. So for an issue like AIDS, for which the vast majority of our respondents already had high interest and knowledge, the "attention-grabbing" was an unnecessary element in the political communications process.

To test the attention barrier hypothesis we proceeded to explore the depth dimension of our data cube--individual differences in cognitive skills and issue-interest. Figures 7 and 8 present the pattern of relative

learning for both low and high levels of cognitive skill as measured by our battery of vocabulary and logical inference items. The theory appears to be supported. The general pattern of television doing better with distant/abstract issues is true for both low and high cognitive groups but is much stronger for the lower cognitive group where reading and information processing skills require a greater investment of effort.

Given that the attention-barrier idea focuses on attentiveness itself, that variable becomes the critical test. We would expect then that political communication would be most successful on television for those less interested in a particular issue. At the beginning of each study we asked each subject to rate a series of issues on how important each issue was to them personally. Thus we were in a position to reanalyze the data for both low and high interest subjects. The results are reported in Figures 9 and 10.

This time, we find even stronger evidence. Television is distinctly more effective for the low interest respondents. For high interest respondents the differences are small. It is interesting to note that magazine coverage with its weekly focus and ability to explain the context and human relevance of events and not just the events of the past 24-hours is, like television, often successful in breaking the attention barrier. The overall differences for learning by different media by low and high cognitive skill subjects is reported in Figure 11.

Figure 7
Learning
(Among Low Cognitive Skill Group)

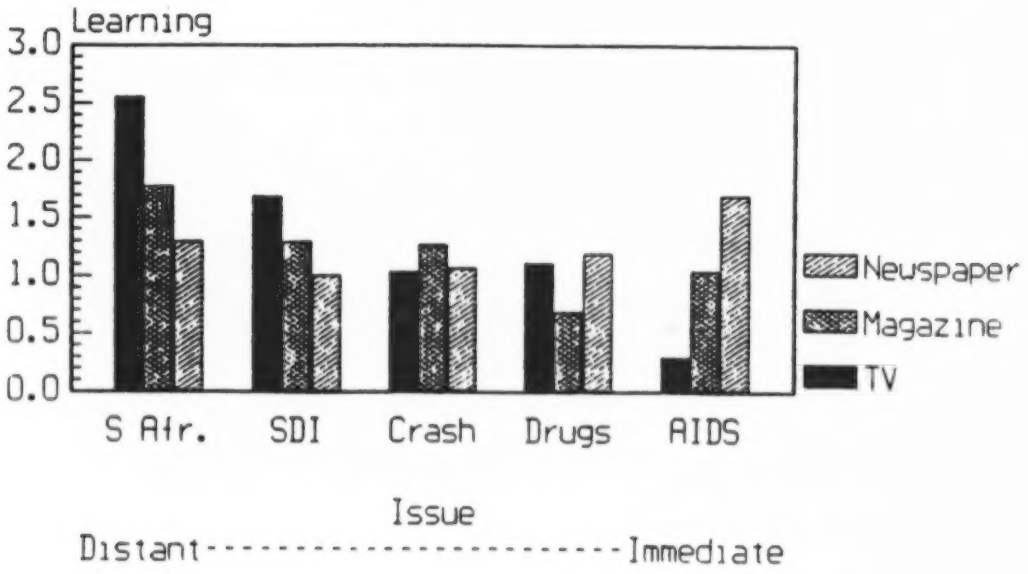


Figure 8
Learning
(Among High Cognitive Skill Group)

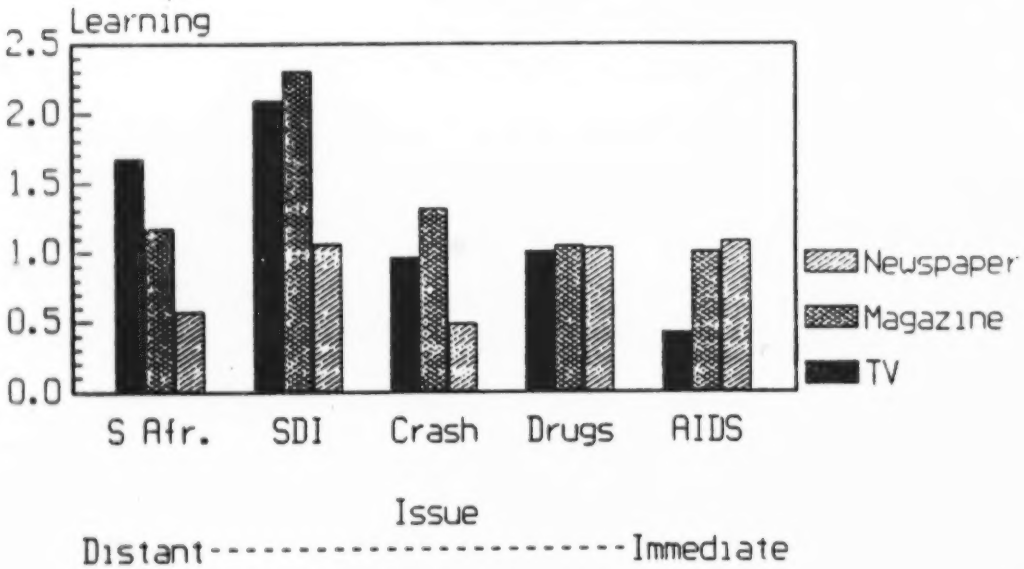


Figure 9

Learning
(Among Low Interest Group)

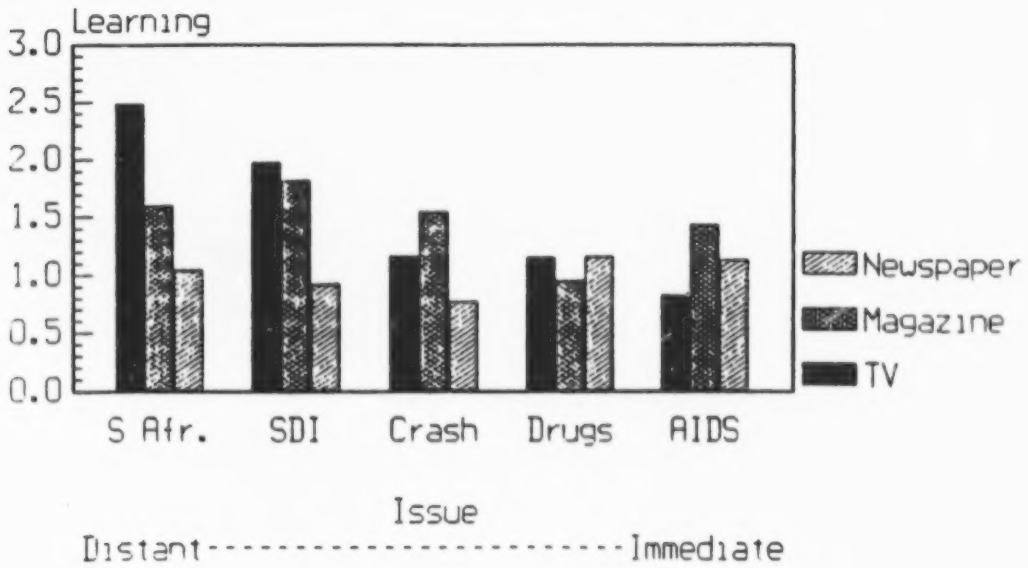


Figure 10

Learning
(Among High Issue Interest Group)

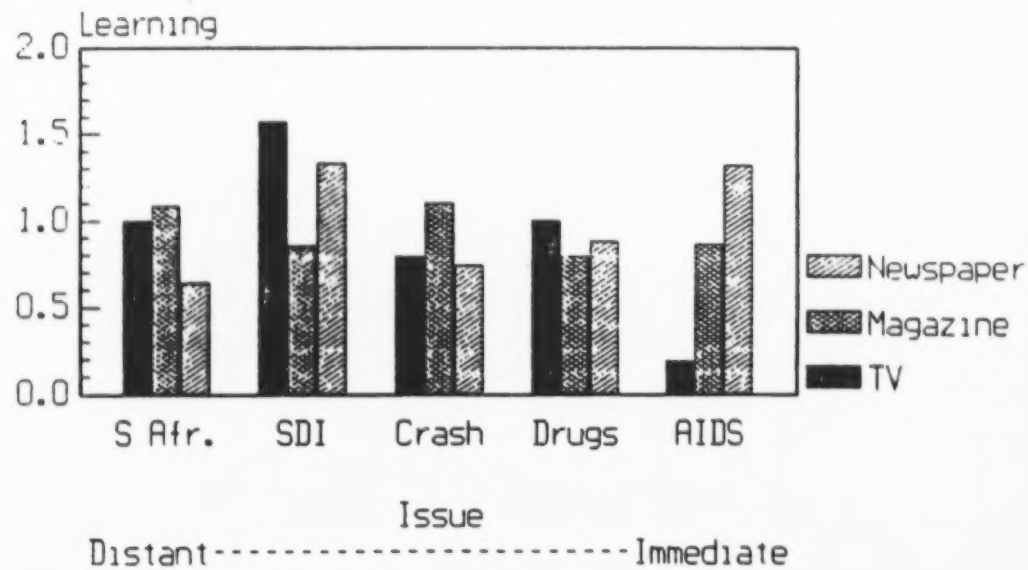
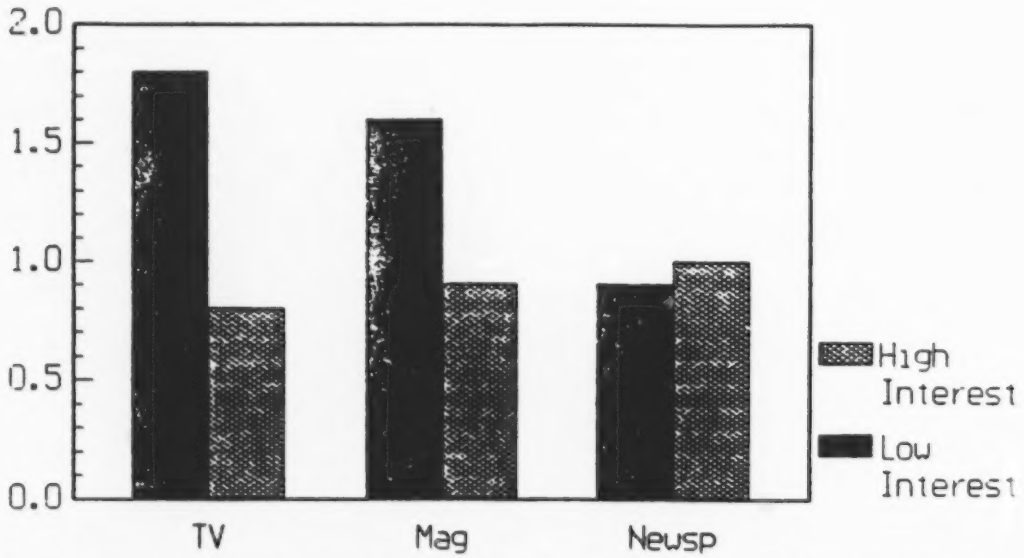


Figure 11

Media Differences
(Increase in Knowledge Scores)



The figures reflect a pattern evident in previous studies on media effects. If the audience is cognitively skilled or highly motivated, the media of communication do not make much of a difference. That is why, perhaps, so many educational experiments on the educational effectiveness of different media led to null findings. In the educational environment, the student is "on task" and assigned to learn an explicit curriculum. Differences in media characteristics, however, may well be very significant. But the significance shows up at the margin--in the circumstances characterized by casual monitoring of world events where effort to learn and personal interest are critical intervening variables. The lesson to be recalled, however, is that such conditions prevail for 99% of adult political learning in the American polity.

Concluding Comments

How people learn about the world around them from the available news media is a central issue for the viability of democratic societies. The issues we have examined cover a range of topics for which public understanding is critical to public action. If a knowledge gap exists or is exacerbated by the structure of political information flow, it is a matter which merits close attention.

In applying our results to the problem of civic information, we recognize that the conditions of learning in our experiments, by their nature, are unlike the circumstances of learning in citizens' homes. These experiments however provide clues to the puzzle of political learning that cannot be uncovered any other way. For example, we know from existing survey data that people who depend on print media are better informed on the issues than people who rely primarily on television. What our experiments accomplish is to "force" attention to news on a particular topic in a particular medium. Therefore we have been able to isolate out the entangled variables of political interest and preferred news medium.

Our results lead us to the conclusion that of the media we have studied in their natural state, television is particularly effective in helping people learn about issues which are "distant." We do not mean simply that television is effective in bringing closer events that are geographically distant,[23] but also those which are "culturally" distant, such as apartheid, or outside immediate experience, such as SDI. Importantly, television is capable of breaking the information barrier for citizens who

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[23] Johann Galtung and Mari Holboe Ruge, "The Structure of Foreign News," in Jeremy Tunstall, ed. Media Sociology. Urbana, Illinois: University of Illinois Press, 1970.

are not especially attentive to issues outside their personal experience. It appears that the presentation of news on television has a pedagogical effect for people with low interest in public affairs. Our results also suggest that television can be very effective for people with low cognitive skill (at least on the basis on which we have measured that attribute). Perhaps the reason for television's educational advantage in presenting public issues is that the intimacy of the medium brings issues closer. We can express the learning effectiveness of television another way. TV lowers information costs for those whose information costs are high--those who are not very cognitively skilled, and perhaps those who do not (unlike political scientists, for example) gain secondary social gratification from appearing to be informed.

Our results also indicate that print can be as effective as television in presenting issues about which most have some personal knowledge. Perhaps the level of experience, interest, or information that people have about issues such as AIDS or drugs, overcomes the perceived "difficulty" of gaining information from print sources. Once people have basic knowledge it may be possible for them to take advantage of the view-and-review quality of print media. The results suggest that the media can be viewed as a complementary array of resources, with electronic media, for example, stimulating attention to print media or supplementing information about high salience issues.

Overall, our results suggest that people who are highly advantaged in the information game can effectively use any news medium to learn about public issues. The results of our experiments suggest that television has a crucial role to play in informing the mass public about distant issues, so

that a meaningful majority of citizens can be effectively engaged in democratic debate. While these results could be used to bolster the sagging fortunes of network television news, our findings should also be valuable to those who are engaged in the design of the next wave of information technologies. Our hope is that citizens with diverse cognitive skills and interests can learn both from the "old" and the "new" media.

In summary, our research on the interaction of media coverage, issue characteristics and individual differences in the mass audience provides grounds both for some confidence and some continuing concern. The confidence draws from our conclusion that broadcast and print media are fundamentally complementary. It is simply not true that the vast bulk of the American citizenry selects print or broadcast media and excludes information from any other source. Although people are willing, in response to the insistence of the survey interviewer, to identify a primary or preferred source of news, most everyone picks up ideas and information from a complex mix of media and personal discussions. If television is particularly successful at breaking the attention barrier and getting people interested, and print media are particularly successful at providing the in-depth follow up, then the relationship is synergistic rather than antagonistic. It might be that he political communications process would be enhanced by a more self-conscious coordination between the two media.

On the other hand, it is clear that the professional journalists themselves have very little feedback on how well the information they prepare is "getting through." Their notions of which media are most successful at communicating what kinds of issues are contradicted by our data. There would appear to be ample room to extend and strengthen the

political communications process, by fine-tuning journalistic traditions to the behavior of real people, in order to more appropriately take advantage of complementary media strengths.

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